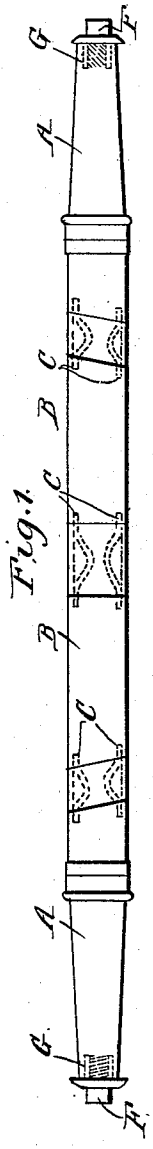
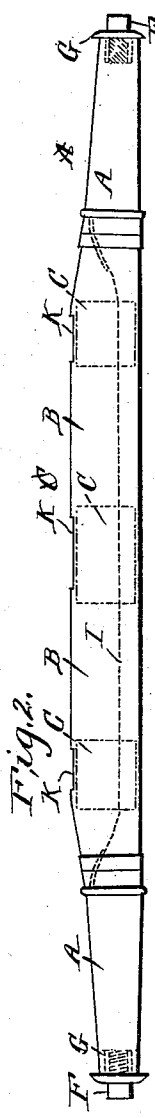
F. REISSNER.

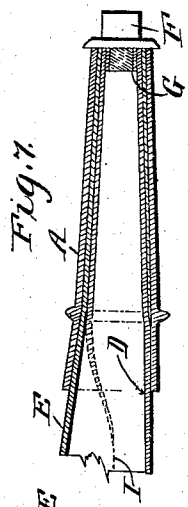
WAGON AXLE.

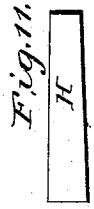
APPLICATION FILED AUG. 16, 1912.

1,219,153. Patented Mar. 13, 1917.

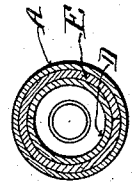


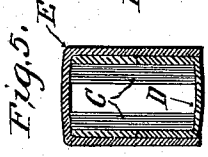


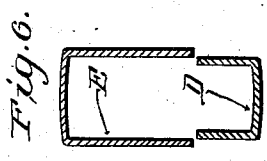


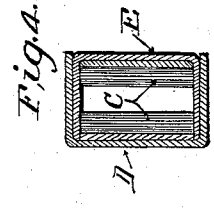


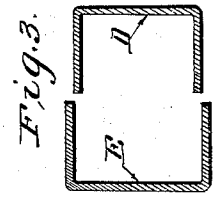


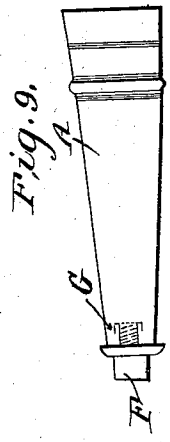












Witnesses.
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Con. E. Shea

Inventor
Fred'k Reissner
by S. G. Kinsey Pl'f Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK REISSNER, OF CHATHAM, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO A. T. MUNGER, OF HARROW, ONTARIO, CANADA.

WAGON-AXLE.

1,219,153. Specification of Letters Patent. Patented Mar. 13, 1917.

Application filed August 16, 1912. Serial No. 715,509.

To all whom it may concern:

Be it known that I, FREDERICK REISSNER, of the city of Chatham, in the county of Kent, Province of Ontario, Canada, have invented certain new and useful Improvements in Axles, and do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to an improvement in axles for wagons, buggies and other wheeled vehicles, in which steel plates are used, cut, pressed into shape and electrically welded.

The object of my improvement is to make a light and strong axle. An axle made from sheet steel in the manner herein specified, is lighter in weight and stronger than the wooden axle in general use.

I attain the objects in the manner illustrated in the accompanying drawings, in which,

Figure 1 is a top view of axle, while Fig. 2 is a side view.

Figs. 3 and 6 are sections of two pieces of steel, bent ready to shove together, the one fitting tightly in the other. The former showing one side piece fitting into the other and the latter, the lower member D, fitting into the upper member E. The principle is the same in both of these figures. In Fig. 3 the two hollow parts are shown adapted to fit together laterally, in Fig. 6 vertically. The said parts are slightly separated in these views. The construction of Fig. 6 is generally preferred. That of Fig. 3 may be considered as a modification.

Figs. 4 and 5 are sections of the square part of axle near the seat of hounds K, when the two parts are pressed together and electrically welded and show the reinforcements C in position.

Fig. 7 is a longitudinal section of the tapered part of axle, showing three thicknesses of steel. The ring G is also shown, electrically welded in place with the nut F in position.

Fig. 8 is a cross section of the outer ends of the axle.

Fig. 9 is a view of a separate skein which can be easily removed when worn out and a new one replaced.

Fig. 10 shows the shape of the reinforcements C that are electrically welded to the inner sides of the axle, under the seat of hounds and reach.

Fig. 11 is a view of a separate sleeve which can be used in like manner to the skein.

Similar letters refer to similar parts throughout the several views.

The axles are made from sheet steel (preferably No. 2 gage) in the following manner: Two sheets or plates of steel are cut to a pattern and pressed to shape as shown at D, and E, Fig. 3 or 6, preferably the latter. The two members are then fitted together as in Figs. 4 and 5 and pressed to shape as at Figs. 7 and 8, forming the indentations K, Fig. 2 (these being the seats for the hounds and reach) also the shoulders of the skein A, all in one operation. The dotted line 1, (Figs. 2 and 7) shows how the lower piece D turns as it is pressed, forming the inner piece of the round part of axle with the joint above. The upper member E in the operation passes around the member D, and comes together with the joint below, all as shown in Fig. 8.

To further strengthen the axle, I reinforce the inside thereof with pieces of steel C shaped like Fig. 10 arranged in pairs on opposite sides of the axle, facing each other and electrically weld them in place under the seat of hounds and reach as shown by dotted lines in Figs. 1 and 2.

After the axle is shaped, it is electrically welded along the sides and joints, firmly welding the whole together forming one piece.

It will be noted that at the points where the wooden axle is weak and usually breaks, I have the steel axle strengthened.

These axles can be made with or without a skein or made to use cast iron skeins.

I make a further improvement by inserting into ends of axle at G, a wrought iron ring threaded on its inner side and electrically weld it in place forming a solid piece of steel which receives the end screw at F, that keeps the wheel in place.

To make the axle stronger the skein A (Figs. 1, 2, and 7 and 9) is made separately by being cut and pressed into shape from one piece and electrically welded at the joints, then driven snugly on to the ends

of the axle. These skeins can be removed when worn out and a new one driven on in a few minutes.

At Fig. 11, is shown a sleeve H, made and used in the same manner as the skein.

For the axles of buggies, democrats or other vehicles, I use different patterns as required; otherwise, they are made in like manner to the wagon axle.

What I do claim as my invention and wish to secure by Letters Patent, is:—

1. A tubular metallic axle provided internally on each side with curved metallic reinforcing strips welded to said axle.

2. A tubular metallic axle composed of two parts U-shaped in cross-section and fitted and welded together, also provided internally with pairs of curved metallic reinforcing strips arranged on each side of the axle and welded thereto.

3. A tubular axle having internally screw-threaded rings welded into its extremities, in combination with end screws engaging said rings and provided with laterally extending flanges for holding the wheels in place.

Chatham, 6th day of August, 1912.

F. REISSNER.

Signed in the presence of—
CON E. SHEA,
S. G. KINSEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."